NEVADA Flood Management News

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Share Your Success Stories

We invite you to share your successful floodplain management strategies with our readers.

Please forward your story to:

Nevada Division of Water Resources
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Carson City, NV 89706-0818
groenewd@water.nv.gov

NEVADA FLOODPLAIN MANAGEMENT PROGRAM

Southern Nevada Flooding

It seems to be a truism in Nevada that we are either in a drought or we are flooding. This winter's heavy rain and snow have hit Southern Nevada particularly hard causing everything from flooded streets and related traffic accidents to heartbreaking flood damage to homes and businesses in Overton, Logandale, Caliente and Mesquite. Severe damage to roads and infrastructure left parts of Lincoln County inaccessible. The Virgin River near Mesquite changed course and attempts with dynamite to coax the river back into its former channel were to no avail.

This winter has already been declared the wettest on record for Southern Nevada. Flood damage prompted Federal disaster declarations making public assistance available to public agencies and private non-profit organizations for emergency work and the repair or replacement of damaged facilities in Lincoln and Clark Counties. A Small Business Administration disaster declaration has made business owners, homeowners and renters eligible for low-interest loans to repair damage or replace lost property.

As with flash flooding that occurred in northwest Las Vegas in the summer of 2003, much of the flood damage occurred in areas not identified in a FEMA mapped Special Flood Hazard Area ("100-year" flood zone). Many people when building or buying new homes rely on the FEMA Flood Insurance Rate Maps to define "what will get wet and what will stay dry" in the next flood. Unfortunately our experience indicates that flooding can and does occur outside of mapped flood zones and in fact *all* areas can be susceptible to flooding.

Inside this issue of Flood Management News you will find information on FEMA's Map Modernization effort to update Flood Insurance Rate Maps as well as information on NFIP standards and No Adverse Impact floodplain management. These programs should be viewed as tools floodplain managers can use to help people and communities protect themselves through wise floodplain management.

Kim Groenewold, Program Officer
Floodplain Management Program

NFIP Substantial Improvement Requirements

Generally speaking, the building requirements of the National Flood Insurance Program (NFIP) apply to new, post-FIRM development that occurs in Special Flood Hazard Areas. The NFIP requirements affect pre-FIRM buildings only when an existing building is ***substantially damaged*** or ***substantially improved***.

What is the NFIP Requirement for Substantial Improvement?

The term "pre-FIRM buildings" means buildings whose construction began on or before December 31, 1974, or before the effective date of a community's first Flood Insurance Rate Map (FIRM), whichever date is later. The effective date of a community's first FIRM is also referred to as the pre-/post-FIRM date and can be found printed on each FIRM panel.

If a pre-FIRM structure is substantially improved, it must be brought into compliance with NFIP regulations and other requirements in the local ordinance; that is, the structure must be elevated (or it may be flood proofed if it is a non-residential structure) to or above the level of the 100-year or base flood, and meet other applicable requirements (e.g. flood venting, flood resistant materials, utilities elevated or protected, and anchoring).

Substantial Improvement includes Substantial Damage resulting from any cause, not just flooding (photo by Ed Perez, California Department of Water Resources).

What Constitutes Substantial Improvement?

"Substantial improvement" means any rehabilitation, addition, or other improvement of a building when the cost of the improvement equals or exceeds 50 percent of the market value of the building before start of construction of the improvement.

Substantial improvement also includes buildings that have incurred "substantial damage." "Substantial damage" means damage of any origin sustained by a building when the cost of restoring the building to its pre-damaged condition would equal or exceed 50 percent of the market value of the building before the damage occurred. Substantial damage is determined regardless of actual repair work performed.

Substantial improvement or damage does not, however, include any project for improvement of a building to correct existing violations of State or local health, sanitary, or safety code specifications identified by local code enforcement officials as the minimum specifications necessary to assure safe living conditions. Also excluded from the substantial improvement requirement are alterations to historic buildings as defined by the NFIP.

What Happens When a New FIRM Comes Out?

Any house that can be shown to have been built in compliance with local floodplain management regulations and the flood map at the time of construction will continue to be considered compliant, even if the new maps will show an increase in flood elevation or a change to a more restrictive zone designation. However, should a structure be substantially improved *the entire structure must be brought into compliance with NFIP requirements* for the flood zone designation in effect at the time the repairs take place.

Who Determines Substantial Improvement?

It is the responsibility of the community permitting official to assure that market value estimates are reasonably accurate and that the cost estimate for improvements reasonably reflects actual costs. The local permit official may require that the permit applicant or owner of the building supply the information necessary to make the determination.

The closer the level of improvement or damage appears to approach 50% of the market value of the structure, the greater the precision needed in determining substantial improvement. For example, if the cost of improvements relative to market value is thought to be minor (less than 40%) or extensive (greater than 60%), then more approximate methods for determining substantial improvement may suffice. In contrast, if the ratio is suspected to be between 40% and 60%, then de-

No Adverse Impact Floodplain Management and the Courts

The Association of State Floodplain Managers (ASFPM) has recently made available *No Adverse Impact Floodplain Management and the Courts*, a publication by Jon A. Kusler, Esq. that addresses potential legal issues for communities adopting a no-adverse-impact approach to floodplain management.

Although the publication is intended primarily for lawyers, it's content is highly relevant for federal, state, and local government officials, regulators, academics, legislators, and others whose duties and decisions can affect or reduce flood hazards.

No Adverse Impact Floodplain Management and the Courts is in a question-and-answer format that explains the common law and constitutional bases for lawsuits dealing with floodplain management, with an eye toward using a no-adverse-impact standard at the local level. Jon Kusler answers questions such as:

- Will courts uphold community floodplain regulations that contain a no-adverse-impact standard against "takings" and other constitutional challenges to regulations?
- Will adherence to the no-adverse-impact approach reduce successful lawsuits against governments for increasing flood and erosion losses on private properties?
- May governmental units be liable if they fail to adequately consider flooding when issuing regulatory permits, if damage to private landowners results?
- May a governmental unit be held liable for flood damage that results from ditches, channels, storm water detention facilities, roads, and other infrastructure constructed by developers and dedicated to governmental units?
- May a governmental unit be held liable for failing to carry out adequate building inspections?
- May governments attach conditions to permits to reduce the impacts of proposed activities on flooding and to protect structures?

The report also discusses three primary factors that the courts consider in deciding whether floodplain regulations constitute a "taking" of private property without payment of just compensation.

No Adverse Impact Floodplain Management and the Courts is available for viewing and downloading on the ASFPM web site: www.floods.org. Other publications concerning the no-adverse-impact concept, including *No Adverse Impact, A Toolkit For Common Sense Floodplain Management,* are also available through the ASFPM web site.

NFIP Substantial Improvement Requirements (continued)

tailed, itemized estimates for the cost of improvements and definitive estimates of market value must be used.

How is Substantial Improvement Determined?

For the purposes of determining substantial improvement, market value pertains only to the structure in question. It does not pertain to the land, landscaping or detached accessory structures on the property. Market value may be estimated in several ways including:

- Independent appraisal by a professional appraiser;
- Detailed estimate of a structure's actual cash value;
- Adjusted property appraisal used for tax assessment;
- Value of structure from NFIP claims data;
- Qualified estimates from tax assessor's or building department's staff.

Likewise, improvement cost or damage value may be estimated in several ways including:

- Itemized estimates from licensed contractors or professional estimators;
- Damage estimates from NFIP claims data;
- Local officials with knowledge of local costs can make "qualified estimates;"
- Marshall and Swift handbook;
- Building Inspection Departments.

. . . a community should adopt a conservative method and apply it consistently.

It should be noted that a structure's replacement cost should generally NOT be used for its market value unless market values have depreciated such that its use is justified. Whatever method is employed, FEMA recommends that a community should adopt a conservative method and apply it consistently.

MAP MODERNIZATION IN FEMA REGION IX

By Kathy Schaefer, PE, CFM and Mike Skowronek, AICP
Michael Baker Jr., Inc.

The Federal Emergency Management Agency (FEMA) is undertaking a dramatic transformation of our Nation's flood hazard maps. This transformation, known as Multi-Hazard Flood Map Modernization program or Map Mod, is a Presidential initiative that aims to bring the Nation's flood mapping program into the digital age. Infused with funds provided by the President and Congress, Map Mod is transforming the way flood maps are created and accessed. FEMA's vision is to provide flood maps and data for communities nation wide that are easier-to-use, and readily available. This addresses both National Flood Insurance Program (NFIP) requirements and customer demand.

More than 70% of the nation's maps are more than 10 years old, which leads to improper decision-making. As floodplain managers, we know that up-to-date maps enable more actuarially sound flood insurance programs, wise floodplain management, and increased flood hazard awareness. Up to date maps also serve as a cornerstone in helping communities better prepare for flood disasters (NFIP serves 4.5M policy holders providing $650B in coverage). With the new risk management platform that is part of Map Mod, officials and citizens will have a powerful new tool for multi-hazard risk management, one that will enable the user to use and store data for a variety of hazards-- including those that are man-made.

Map Mod is envisioned to lead the Nation down a path that will dramatically transform the way we view, use and think about flood maps. The road map to guide this transformation is laid out in the Multi-Year Flood Hazard Identification Plan (MHIP). The MHIP is the first ever national look at how FEMA and its partners plan to update flood maps. Developed in close collaboration with state, regional and local entities and other partners, it outlines a five-year schedule and budget for conducting flood studies and providing reliable digital flood hazard data and maps to support the NFIP.

A key partner in helping FEMA with the Map Mod transformation is the National Service Provider (NSP), known as the Mapping On Demand (MOD) Team. The MOD team, led by Michael Baker Jr. Inc., is a consortium of over 20 companies with expertise in floodplain management, GIS, mapping tools, internet portal development and customer outreach. The mission of the MOD Team is to help FEMA accomplish the following:

- Develop enabling technology to facilitate the cost-effective production, distribution, and usefulness of modernized flood maps.
- Provide effective program management to see that Map Mod is run efficiently and meets the mandates established by Congress for budget and schedule.
- Empower the user community to understand and accept the products developed by the Map Mod program.
- Encourage and enable partners to deliver results by having them take ownership of their flood mapping process and products, and effectively use the standardized tools and technology offered at a national level.

To ensure close collaboration with stakeholders and to provide support to the regional FEMA offices, the National Service Provider established Regional Management Centers (RMC) in each of the ten FEMA regions. Regional Management Center 9 is located near the FEMA Region IX offices in downtown Oakland. Mentored by retired FEMA Branch Chief, Jack Eldridge, it is staffed with a core group of GIS specialists and Engineers trained to assist mapping partners throughout the scoping, data development, map production and map adoption process.

Regional Management Center 9 staff support FEMA Headquarters, by providing information on the status of Region IX mapping needs and mapping projects, helping to ensure that the congressionally mandated metrics are met. Within Region IX, the Regional Management Center serves as the conduit for disseminating and supporting the Map Mod technology, mapping tools and mapping standards that will help FEMA's mapping partners produce quality data and maps cost effectively.

Regional Management Center 9 staff support FEMA Region IX and the Region's mapping contractors and Cooperating Technical Partners (CTP). One of the most significant tasks being performed by the Regional Management Center 9 is a coordinated ordinance review and outreach effort to ensure that the high volume of new flood insurance rate maps (FIRMs) being developed under Map Mod are adopted on-time, as scheduled by FEMA Region IX.

Everyone involved with the Map Mod initiative, including FEMA, FEMA's mapping contractors, Cooperating Technical Partners and Regional Management Center staff around the country, are working hard to dramatically transform our nation's flood hazard maps into a powerful multi-hazard risk management tool. It is an exciting time for FEMA and we encourage you to stay tuned as we continue to share updates on the progress.

For more information, visit the following sites:

- Overview of Map Modernization: www.fema.gov/fhm/mm_main.shtm
- Multi-Year Flood Hazard Identification Plan (MHIP): www.fema.gov/fhm/mh_main_txt.shtm
- Multihazard Information Platform (MIP): hazards.fema.gov
- Guidelines and Specifications for Flood Hazard Mapping Partners: www.fema.gov/fhm/gs_main.shtm

FEMA Approves Nevada State Multi-Hazard Mitigation Plan

The Nevada State Multi-Hazard Mitigation Plan submitted by the Nevada Division of Emergency Management was approved by FEMA on October 28, 2004. This approval ensures that Nevada communities continue to be eligible for planning and project grants under the Pre-Disaster Mitigation (PDM) program through FEMA.

Any community wishing to obtain a PDM project grant must have completed a FEMA approved multi-hazard mitigation plan. PDM planning grants are available to assist communities with fulfilling the multi-hazard planning requirement.

For more information on PDM grant opportunities in Nevada, contact Elizabeth Ashby at the Division of Emergency Management, (775) 687-3114 or eashby@dps.state.nv.

Floodplain Management Association

WSPG 2-Day Course
April 14-15, 2005
Las Vegas, Nevada
Instructed by Tracy Lund, P.E.
Sr. Manager, Psomas and Associates

Floodplain Management Workshop & CFM Exam
May 26-27, 2005
At the California Department of Water Resources Sacramento, California
Instructed by Diane L. Calhoun
Project Manager, Michael Baker Jr., Inc.

HEC-HMS 3-Day Course
June 7-9, 2005
Sacramento, California
Instructed by Marty Teal, P.E., P.H.
Vice President, WEST Consultants

For more information visit the FMA web site at **www.floodplain.org**

ASFPM 2005 Annual Conference
June 11 - 17, 2005
Madison, Wisconsin
www.floods.org

2005 FMA Annual Conference
September 6 - 9, 2005
Sacramento, California
Hyatt Regency at Capitol Park
www.floodplain.org

THE LAND MANAGEMENT PARADOX

Regulations are unpopular until serious flood damage occurs. But then it is too late because development is already in place. And reducing losses to existing flood-prone property is infinitely more difficult than preventing the unwise construction in the first place.

WARNING: PROPANE TANKS IN THE FLOODPLAIN

Franklin, VA, September 21, 1999—As flood waters recede after Hurricane Floyd remaining hazards still include propane tanks, gas tanks, chemical barrels, and pesticides. Photo by Liz Roll, FEMA News Photo

During a flood unanchored propane tanks can be easily moved by flood waters and pose a serious threat to public safety and the environment.

Federal regulation requires that propane tanks located in Special Flood Hazard Areas must by properly anchored. The applicable requirement can be found in Title 44 Code of Federal Regulations 60.3 (a) (3) (i) - *" . . . all new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the **structure** resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.*" The NFIP definition of *structure* can be found in 44 CFR 59.2 - *"**Structure** means, for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home. . . ."*

Technical information on anchoring propane tanks may be found in the publication FEMA 348, Protecting Building Utilities From Flood Damage, November 1999 available through the FEMA website at **http://www.fema.gov/hazards/floods/lib06b.shtm.**

The Regulatory Floodway

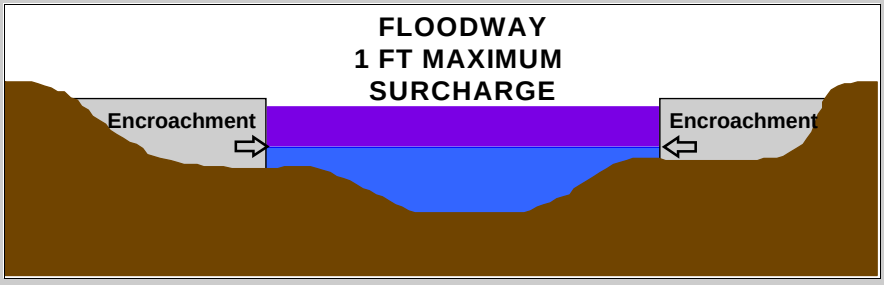
FEMA defines the *regulatory floodway* or *floodway* as "the stream channel plus that portion of the over banks that must be kept free from encroachment in order to discharge the 1-percent-annual-chance flood ('100-year' flood) without increasing flood levels by more than 1.0 foot." The area within the 1-percent-annual-chance floodplain but outside of the floodway is termed the *floodway fringe*.

On Flood Insurance Rate Maps (FIRMs), the floodway is indicated inside a Zone AE with dark shading and diagonal lines. For communities with older maps, a separate Floodway Flood Boundary and Floodway Map panel accompanies the FIRM panel and shows the floodway in white with the floodway fringe darkly shaded.

The boundaries of the floodway are determined during the hydraulic analysis for the flood insurance study by using a computer model to simulate encroachment of the floodplain that squeezes in from the outside margins of the "100-year" floodplain toward the center-line of the river or stream. As encroachment incrementally squeezes the width of the floodway, model simulations are rerun to determine the resulting rise in the Base Flood Elevation. When the Base Flood Elevation rise reaches one-foot ("1-foot maximum surcharge"), the corresponding floodplain width defines the regulatory floodway.

It is important to remember that the floodway is a sub area of the AE Zone that is regulated differently from the rest of the AE Zone; it is not a geomorphologic feature of the river or stream. The NFIP requires that within the floodway DEVELOPMENT IS PROHIBITED unless a demonstration is made that the proposed encroachment will result in NO INCREASE IN BASE FLOOD ELEVATIONS at all ("no-rise" demonstration).

But even the "no-rise" floodway standard is theoretically insufficient to keep dry all community development within the "100-year" floodplain during the "100-year flood." Because the floodway analysis allows a 1-foot rise in Base Flood Elevations, if all structures are built with lowest floors at Base Flood Elevation and encroachment entirely fills the floodplain right up to the floodway boundary, in theory all structures will be one foot underwater above the lowest floor. This is why FEMA encourages communities to *track the cumulative effects* of development in their floodplains and to *adopt "freeboard" standards* requiring elevations of lowest floors a foot or more above Base Flood Elevation.



FAQs

What happens if a community doesn't participate in the NFIP?

Flood insurance under the NFIP is not available within that community. Furthermore, Section 202(a) of Public Law 93-234, as amended, prohibits Federal officers or agencies from approving any form of financial assistance for acquisition or construction purposes in a Special Flood Hazard Area (SFHA). For example, this would prohibit loans guaranteed by the Department of Veterans Affairs, insured by the Federal Housing Administration, or secured by the Rural Housing Services.

If a Presidential declared disaster occurs as a result of flooding in a non-participating community, no Federal financial assistance can be provided for the permanent repair or reconstruction of insurable buildings in SFHAs. Eligible applicants, however, may receive those forms of disaster assistance that are not related to permanent repair and reconstruction of buildings. If a community applies and is accepted into the NFIP within 6 months of a Presidential Disaster declaration, these limitations on Federal disaster assistance are lifted.

Emergency Management Institute Training

Courses Conducted by the Emergency Management Institute (EMI)

Mitigation Curriculum
Schedule for April 1, 2005 through September 30, 2006

E172 - Advanced HAZUS Multi-hazards for Flood

September 26-29, 2005
May 1-4, 2006
August 14-17, 2006

E190 - Intro to ArcGIS for HAZUS Mitigation Users

June 13-16, 2005
October 11-13, 2005
February 6-8, 2006

E194 - Advanced Floodplain Management Concepts

December 12-16, 2005
June 26-29, 2006,
August 28-31, 2006

E234 - Digital Hazard Data

January 30-February 2, 2006

E241 - Advanced Cooperating Technical Partners

March 13, 16, 2006
September 25-28, 2006

E264 - Hydrologic Engineering Center River Analysis System

May 23-27, 2005
May 22-26, 2006

E273 - Managing Floodplain Development thru the NFIP

April 18-21, 2005
June 27-30, 2005
October 3-6, 2005
July 31-August 3, 2006

E276 - Benefit-Cost Analysis: Entry-Level Training

July 25-27, 2005
November 7-9, 2005
July 24-26, 2006

E278 - NFIP/Community Rating System (CRS)

July 11-15, 2005
September 12-15, 2005
October 17-20, 2005
August 14-17, 2006
September 18-21, 2006

E279 - Retrofitting Flood prone Residential Buildings

August 22-26, 2005
August 21-25, 2006

E296 - HAZUS Multi-Hazard/DMA 2000 Risk Assessment

August 8-11, 2005

E313 - Basic HAZUS Multi-hazards (MH)

June 20-23, 2005

E317 - Comprehensive Data Management for HAZUS Multi-Hazards

September 12-15, 2005

How to Apply: Applicants to EMI must submit a Standard General Admission Form (FEMA Form 75-5) to Kim Groenewold, Nevada Floodplain Management Program, groenewd@water.nv.gov or by FAX (775) 687-6972. Forms and detailed information about the courses are available on FEMA's web site **training.fema.gov.**

FEMA Training for Lenders and Insurance Agents

Courses Conducted by FEMA Insurance Contractor, Computer Sciences Corp.

None scheduled in Nevada at this time.
Check the FEMA web site
www.fema.gov/regions/ix/r9_nfip.shtm

for a list of Lender and Insurance Agent Workshops to be held in Region IX

How to Apply: Please contact the Edie Lohman at (916) 780-7905, Lohmannnfip@hotmail.com.

Nevada Floodplain Management Training

Courses Conducted by the FEMA Region IX and NDWR

None scheduled at this time.
Check the NDWR web site
water.nv.gov/flood/training_calandar.htm

for new postings of workshops as they become available

How to Apply: For more information or to register, contact Ann Mori at (775) 687-4380, extension 6, amori@water.nv.gov.

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http://water.nv.gov

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Flood Management News

How lucky are you?

Without flood insurance, you're playing the odds that your house will never experience a flood. However, the truth is that no one can predict who is safe from flooding and who isn't.

www.floodsmart.gov